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REVISED ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITIES OF MAHARASHTRA

NASHIK

Maharashtra pollution control board

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REVISED ACTION PLAN FOR CONTROL OF AIR POLLUTION IN NON-ATTAINMENT CITY OF MAHARASHTRA

NASHIK

1. Preamble

Nashik District is located between 18.33 degree and 20.53 degree North latitude and between 73.16 degree and 75.16 degree East Longitude at Northwest part of the Maharashtra state, at 565 meters above mean sea level. The District has great mythological background. The Godavari River originates from Trimbakeshwar in Nashik. One of the 12 Jyotirlingas also at Trimbakeshwar. Nashik has to its credit many well-known and towering personalities like Veer Sawarkar, Anant Kanhere , Rev. Tilak, Dadasaheb Potnis, Babubhai Rathi, V.V. Shirwadkar and Vasant Kanetkar just name few. Nashik is also known as Mini Maharashtra, because the climate and soil conditions of Surgana, Peth, Igatpuri resembles with Konkan. Niphad, Sinnar, Dindori, Baglan blocks are like Western Maharashtra and yeola, Nandgaon, Chandwad blocks are like Vidarbha Region. Nashik, Malegaon, Manmad, Igatpuri are some of the big cities situated in the Nashik District.

Nashik district is the third largest district in Maharashtra in terms of Population of 61,09,052 and area occupying an area of 15,582 square kilometres in the north Maharashtra region. It is bounded by Dhule district to the north, Jalgaon district to the east, Aurangabad district to the southeast, Ahmadnagar district to the south, Thane district to the southwest, Valsad and Navsari districts of Gujarat to the west, and The Dangs district to the northwest.

The Western Ghats or Sahyadri range stretches from north to south across the western portion of the district. With the exception of the westernmost few villages, the western portion is hilly, and intersected by ravines, and only the simplest kind of cultivation is possible. The western slope of the

Ghats is drained by several rivers, including the Daman Ganga River, which drains westwards to the Arabian Sea.

The larger eastern portion of the district, which lies on the Deccan Plateau, is open, fertile, and well cultivated. The Satmala-Chandwad Range, which runs east and west, forms the chief divide of the plateau region. Peninsular India's largest River Godavari originates in the district in the Trimbakeshwar Range and continues its sojourn eastwards through the district. The Satmala-Chandwad Range forms a watershed, such that, the rivers emerging to its south drain into the Godavari. These include the Kadva and Darna both of which are tributaries of the Godavari. To the north of the Satmala-Chandwad Range, the Girna River and its tributary, the Mosam, flow eastward through fertile valleys into the Tapti River.

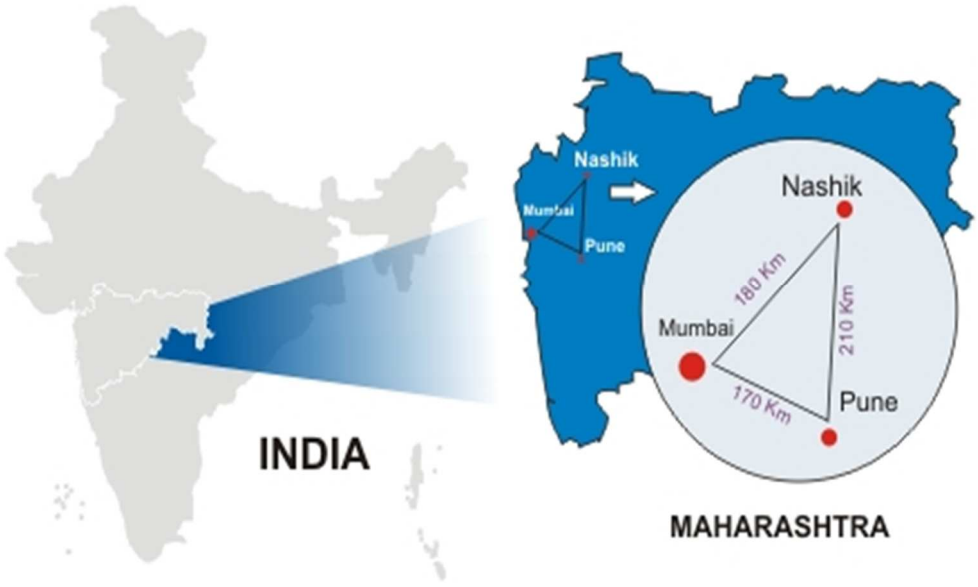
The Trimbakeshwar Shiva Temple is located in Trimbak, one of the twelve Jyotirlingas, where the Hindu genealogy registers at Trimbakeshwar, Maharashtra are kept. The origin of the sacred Godavari River is near Trimbak. Thus, Nashik is an ancient city in the northwest region of Maharashtra in India. Situated on the banks of Godavari River Nashik is best known for being one of Hindu pilgrimage sites, that of Kumbh Mela which is held every 12 years. The city located about 190 km north of state capital Mumbai, is called the "Wine Capital of India" as half of India's vineyards and wineries are located in Nashik

Geography:

Nashik is the third largest city of Maharashtra after Mumbai & Pune. Nashik lies in the northern part of Maharashtra state at 700 m (2,300 ft) from the mean sea level which gives it ideal temperature variation, particularly in winters. Nashik lies at altitude of 700m above sea level and has lush mountainous terrain. The river Godavari originates from the Brahmagiri Mountain, Trimbakeshwar about 24 km (15 mi) from Nashik and flows through the old residential settlement, now in the central part of the city. Due to high pollution created by factories in proximity of the city the river was dying at an alarming rate. It has since been successfully cleaned.

Other than Godavari, important rivers like Vaitarana, Bhima, Girana, Kashyapi and Darana flow across Nashik. Nashik lies on the western edge of the Deccan Plateau which is a volcanic formation. Trimbakeshwar is about 30 km (19 mi) from the city, it is where from river Godavari originates. The land area of the city is about 259.13 km2 (100.05 sq. mi). The city's tropical location and high altitude combine to give it a relatively mild version of a tropical wet and dry climate. Temperatures rise slightly in October, but this is followed by the cool season from November to February. The cool season sees warm temperatures of around 28 ℃ durin g the day, but cool nights, with lows averaging 10 ℃, and extremely dr y air.

Nasik today is a tremendously busy industrial centre. Nashik and its adjoining areas are having very good fertile agriculture land and known for production of good quality of grapes and onions and hosts over a third of India's wineries. Nashik has long been an important religious centre, attracting millions of pilgrims, and every 12 years hosting one of the world's largest gatherings.

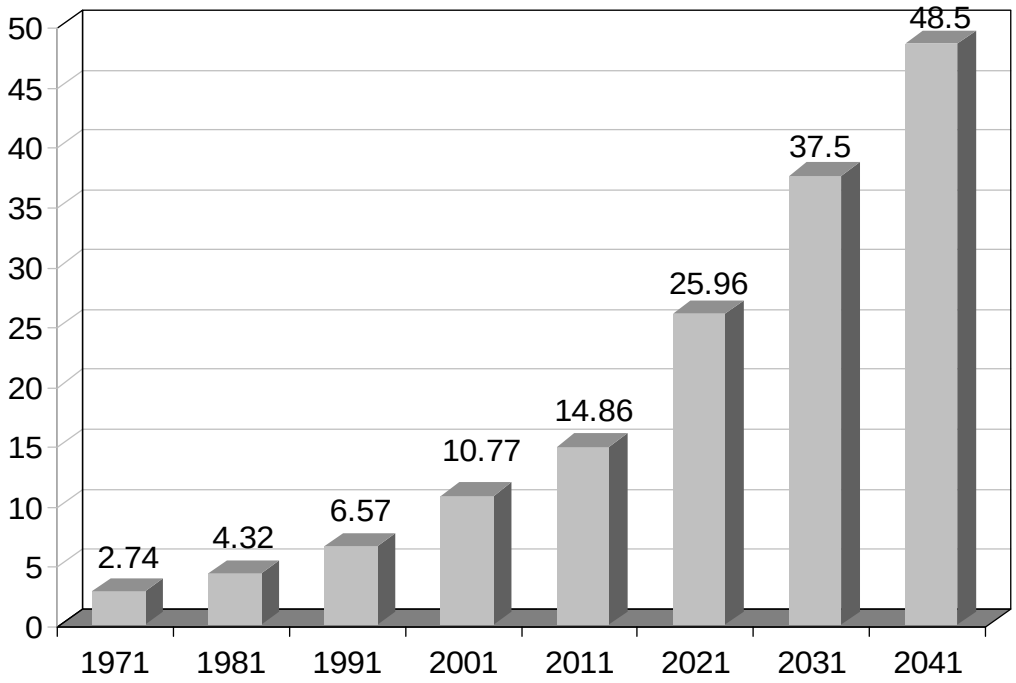


Population : According to the 2011 census, Nashik has a population of 1.48 million as against the 2001 census population of 10,77,236 indicating the growth rate of 37.95% during 2001-2011 decade. With increasing migration to urban areas, Nashik's population is estimated to rise to nearly 4 million by 2030. On the basis of 2011 census figures, the population

density of Nashik Municipal Corporation is 5556 persons per Sq.Km. The city is witnessing rapid motorisation, along with increased congestion and pollution.

Nashik - Demography (Source - Master Plan of Sewerage Mgmt)

Year	Population	Growth (%)
1971	2,74,482	-----
1981	4,32,044	57.40
1991	6,56,925	52.05
2001	10,77,236	63.98
2011	14,86,973	38.03
2021	25,96,278	49.18
2031	37,50,000	44.44
2041	48,50,000	29.33



Slums : With rapid industrialization and building construction activities during the past few years many hutment colonies have come up in the Corporation area particularly near the industrial establishments and other work centres. There are about 168 slums consisting of about 42,742 huts with population of about 2,14,769 souls in the year 2014. This population constitutes near about 14.45% of the total population of the Corporation area. The tables show the details of slums and the details of ownership of lands.

Details of slums (area and population)						
Sr. No.	Division	No of slums	No of hutments	Slum population	Status	
					declared	undeclared
1	Nashik east	25	6479	32395	9	16
2	Nashik west	16	3686	18520	6	10
3	Panchavati	46	10390	52193	15	31
4	Nashik road	44	8150	41554	18	26
5	Cidco	19	6252	31260	2	17
6	Satpur	18	7785	38847	6	12
	Total	168	42742	214769	56	112

The Central & State Government and the Nashik Municipal Corporation have initiated various projects to decrease the number of slums and for the betterment of living conditions of slum dwellers.

2. Area Source

Area sources are mainly domestic sources of fuel (coal, wood, kerosene, LPG) burning, trash/MSW combustion, bakeries, hotels/restaurants etc. and resuspension of dust. Based on the survey and assessment, following recommendations emerge to curb area source emissions:

- Consumption of solid fuel is high in Nashik, which contribute to the

emission on a large extent. Fuel Gas Organizations and ULB should take initiative to sensitize people from the slum and non-slum to make the shift from conventional domestic fuel (LPG, Kerosene, wood). Provision of PNG should also be explored. HPCL is enhancing its storage capacity of Existing LPG bottling Plant from 1390 MT to 2000 MT at Nashik LPG Plant, Malegaon MIDC Industrial area Sinnar. The distance between project site and Nashik city is 25 KM which will be helpful for domestic fuel supply.

- The data for the usage of domestic fuel in slum and non-slum area is not available. Inventorization of LPG quantity from supply agencies should be maintained.
- Nashik being a tourist attraction place, there is increase in number of hotels and *dhabas* along the highways. These hotels and *dhabas* should be regulated to use LPG for its cooking purposes. Traditional wood/coal based tandoors of restaurants as fuel should be replaced by LPG/electrically operated tandoors.
- Similarly usage of LPG by small hotels/ restaurants and roadside tea /snack stalls should also be encouraged. Subsequent concession should be provided.
    - No license is issued to the hawkers on prominent roads. Instead the licenses are given to them where there is low traffic. The strict vigilance from time to time is necessary to observer whether rules are followed or not.
    - Permission must be granted in the vacant places in residential areas, so that they do not cause disturbance on the road.
    - The hawker's zone is created in public places like garden, play grounds, hospitals, bus stand, religious places and big hectic squares.
- The emissions from the stacks of bakeries should be regulated and emission control devices such as bag filter, scrubbers etc should be installed. These bakeries can be made to operate on electric or LPG.
- For increasing population, existing facilities of cremation and burial ground is not sufficient. All crematoria should be installed with efficient

pyres and chimneys for release of emissions. Bodies related emissions from the pyre can be reduced by installing efficient PM control measures such as bag filters or cyclones. Further, a study involving usage of LPG burners in closed furnace like electrical crematoria may be explored as substitute to existing practices.

- Building construction / demolition codes need to be formulated with specific reference to PM control. Operational measures to be made compulsory and building permissions should be revoked if the norms are not met by the organization.
- There is Poor pedestrian infrastructure in Nashik. RUBs / ROBs / Footpaths, Pedestrian crossing etc. are necessary for proper transport system. Provision should be made from Corporation with appropriate fiscal measures.
- Resuspension of dust is one of the major contributors for the higher concentration of PM in the city. For which, corporation should undertake the task of regular maintenance of roads. Road Maintenance Vehicle can be procured for the task. Resuspension can be minimized through regular sweeping and application of treated sewage for road side bioswale system, which will not only keep the kerb-side green but also help in arresting air pollution.
- For the control of re-suspension from construction sites, appropriate barricading should be done to avoid dispersion of the dust and particulate matter in the ambient air. Water spraying on the tires of trucks and vehicles at the entry/exit point of construction site. Constructing a water pit at the entry/exit points of the construction site to avoid dispersion of particulate matter through movement of trucks while entering and exiting the site.
- In all there are existing 144 gardens, having area 98.87 hectares. Out of which 22 are of bigger size. This works out to be 0.58 sq.m. per person which is less. There are 32 playgrounds having 64.21 hectares area out of which 17 are of bigger size. This works out to be 0.38 sq.m. per person which is less. Green Belt Development can be done along the banks of river with provision of cycle track and recreational spots.

For the population of 2026 year, total 49 sites for park are necessary.

- Open Trash Burning is common in Nashik, especially in the season of winter. NMC should take required regulatory measures to abolish the practice of open burning of waste within the city.
- The Nashik Municipal Corporation is collecting about 370 MT of municipal solid waste per day. All the waste from different areas are collected and transported to MSW facility at Pathardi which is 15 km from core area. The bio hazardous waste generated by hospitals in the city is treated at 1000°C in an incinerating plant located near Kannamwar Bridge (near core area). With better collection and transportation measures, the collection efficiency should increase. It is estimated that the projected quantity of municipal solid waste will be 1200 TPD by the year 2031.

Line Source:

Roads: The existing road pattern of the Nashik Corporation Area is almost radial one. The National Highway No.3, Mumbai-Agra Road passes through the Nashik city, while National Highway No.50 i.e. Pune - Nashik Road meets Mumbai-Agra Road in the central part of the city near *Dwarka* point. Four State Highways, Dharmpur-Peth-Nashik-Aurangabad (MSH-2), Nashik-Dindori (MSH-3), Adgaon Girnare-Javhar (SH-28) and Nashik-Trimbak (SH-30) run outwards in radial form. Also there are three Major District Roads i.e. Nashik Road-Deolali-Bhagur (MDR-26), Nashik-Anandwali-Dugaon (MDR-34) and Adgaon-Pimprisayyed (MDR-36). In absence of by-passes to the above important roads and also due to intermixing of local and transit traffic, the situation gets aggravated, resulting in congestion, delays and serious accidents. To avoid this congestion, the flyover on Mumbai-Agra Highway from Pathardiphata to Aurangabad Naka is constructed and is in operation. Numbers of bridges have been constructed on river Godavari, Valdevi, Nasardi at various locations. There is necessity of other bypass roads to link National and State Highways. Existing and new colonies are being connected to the arterial link roads and ring roads by improving the road infrastructure. The break-up of existing road infrastructure is as follows –

Sr.No	*Type of Road*	*Length (km)*
1	Cement Roads	262
2	B.T. Roads	1282
3	W.B.M.Roads	430
	Total	1974

Presently, most public transport in Nashik comprises bus services operated by the Maharashtra State Road Transportation Corporation (MSRTC). The remaining trips are made via privately owned and operated shared auto rickshaws. The public transport in the city is of substandard quality. Buses are overcrowded during peak hours and their speed is dropping by the day due to traffic congestion. As a result, the number of personal motor vehicles is growing at 7 per cent per annum. If this growth continues, The Institute for Transportation and Development Policy (ITDP) estimates that the number of trips made by personal motorised modes will double over the next 10 years. Accommodating this increase in personal motor vehicle use will be difficult. Even if all of Nashik's main roads are transformed to include elevated corridors on top, there won't be enough capacity to meet 2023 demand. Recently, Nashik Municipal Corporation has taken over the City Bus Service to control the increasing traffic problems. The details of increasing vehicles population in the Nashik Jurisdiction is as follows:

Office / Region wise Yearly Registration of Vehicles & Their Growth during the Period 2012-13 to 2016- 17

Name of the Office / Region	**2012-13**	**2013-14**	**Growth %**	**2014-15**	**Growth %**
Nashik	96817	102290	**5.65**	104262	**1.93**
	2015-16	**Growth %**	**2016-17**	**Growth %**	
	109802	**5.31**	101548	**-7.52**	

Sr.	Category	Nashik	Nashik Region
1	Motor Cycles	53416	126481
2	Scooters	21203	34015
3	Moped	1291	4298
	Total --Two Wheelers	**75910**	**164794**
4	Cars	14750	23508
5	Jeeps	9	570
6	Stn. Wagons	0	0
7 a)	Taxis meter fitted	0	39
7 b)	Luxury /Tourist Cabs/	362	648
8	Auto-rickshaws	733	1119
9	Stage carriages	0	3
10	Contract carriages /Mini Bus	165	217
11	School Buses	184	352
12	Private Service Vehicles	0	1
13	Ambulances	21	47
14	Articulated/Multi.	11	148
15	Trucks & Lorries	839	1727
16	Tanker	2	69
17	Delivery Van (4wheelers)	2025	5318
18	Delivery Van (3wheelers)	1009	2145
19	Tractors	4716	9905
20	Trailors	629	1522
21	Others	183	424
	Total	**101548**	**212556**

Regional Transport officer in collaboration with ULB and private and PPP entity should be directed to give information about the time bound strategy to control the vehicular pollution and traffic management for:

- Banning out-dated vehicles of age more than 15 years.
- Adoption of standard emission regulation BS-V and BS-VI in line with EURO-V & EURO-VI for all categories. The benefit of BS-V and BS-VI in PM are 1% and 2.5% of total PM respectively. Similarly the NOx benefits with BSV and BSVI are 7.5 & 14.6%.
- P.U.C. check of auto-rickshaws to be done periodically and ensure that adulterated fuel is not being used. Remote Sensing technology can be utilized for PUC monitoring.
- Need to frame legislation for the Retro-fitment of new engine/Emission Control Devices (Diesel Particulate Filter (DPF) /Diesel Oxidation Catalyst (DOC) that could help in major reduction of PM. Cost sharing and subsidy by the agencies will help in immediate provision.
- The district has 319 petrol pumps, including 74 in the city. Oil companies such as HPCL, BPCL and IOC supply fuel, both petrol and diesel, through 200 tankers daily to pumps across the district. A single tanker includes fuel worth Rs 8 lakh on an average. Accordingly, the total fuel supply in the district is estimated at Rs 16 crore per day. Better quality fuel by adopting stricter fuel supply & dispensing system along with Chemical marker system to keep check on adulterations in fuel. The current fuel specification are too board and therefore, analysis of conventional parameters does not reflect adulteration. Finer fuel specifications are needed for implementation. Success of marker system shall be highly dependent upon the collaboration of Oil Companies and Anti Adulteration Cell. Fiscal Measures for development of alternative fuel technology.
- Concession/rebates by NMC for erection of CNG fuel. Conversion of existing public transport buses/tempos/mini buses to CNG fuel operation.
- The electrical countdown mechanism has to be implemented at major

traffic intersections, which will help in switching on and off vehicles. Proper routing of the vehicles to avoid congestion.

- The total number of buses area 241 which ply on 508 different routes, covering route of 7728.4 kms. The number of passenger handled by the bus system is near about 145000 per day out of which 45000 are students. Besides this approximately 275034 passengers travel through Nashik on 392 schedules and 3280 trips to and from different parts of the State. The figures of passenger handled trips in city area shows that there is necessity of efficient mass rapid transportation system (MRTS).
- Prepare a traffic dispersal model for efficient mobility and Mass Rapid Transit connectivity. Facilitate safe and convenient movement for pedestrian (Subways/ FOBs/ Footpaths including Skywalks).
- As per the provisions of 73 (3), Central Govt. can restrict and limit number of contract carriers in the cities / towns were heavy population is not less than 5 lakhs. Accordingly, Maharashtra Govt. has issued notification restricting number of contract carriers in the city of Mumbai, Thane, Pune, Nagpur, Solapur, Nashik, Aurangabad etc., the provision of Act & Rules need to be reviewed and amended suitably in the light of increasing population & urbanization of these cities. Traffic of heavy goods vehicles may be routed outside city area by creating by-passes & ring roads before entry and exit of the city.
- Management of Intermediate Public Transport - IPT (auto rickshaws / shared auto rickshaws / taxis) can be done considering the travel demand management. Widening of roads approaching towards mass transit stations.
- NMMC, RTO, MSRDC & MIDC should collaborate to formulate time bound design and construction of under passes, fly-overs and widening of roads to control the traffic jams and congestion along Highway and pre-determined junctions passing through core of the city. All buses (STC/PVT/PPP/School/Airport) in the city should be regulated to run only on clean fuels (LPG or CNG) or clean diesel of 10 ppm sulphur with particulate trap for exhaust.

- Hybrid buses can be introduced in fleet of Public buses. Biodiesel (B5/B10:5–10% blends) should be considered as a fuel option for public transport. Promotion of electric public transport. Battery Operated transport vehicles providing point to point service can also be initiated.
- I&M (Inspection and Maintenance) of old vehicles: Promotion of proper maintenance of vehicles. Use of 2T oil in excess is to be avoided. All private vehicles should be subjected to proper assessment and fitness tests through I&M centres. All autos and buses shall also be subjected to I&M tests Implementation of penalties should be laid on vehicles if found exceeding the emission limits. Set up a mechanism of Inspection and Maintenance programme for all vehicles in the district through RTO with automated system assessment. The I&M centre should also test all vehicles for their in-built emission tests.
- Promotion of non-motorized transport (NMT). Bicycle sharing schemes should be introduced in the city. Provision of cycle parking facilities at mass transit (BRT/Metro) stations should be made. Provision of City E rickshaw can be initiated. Allocation of designated space for idling/ parking of cycle rickshaws will curb traffic congestion.
- Promotion of use of pool car system, sharing of vehicles, utilization of public transport and use of bicycles for short distances.
- Sweeping of the roads should be done regularly. Vacuum suction pumps for sucking of road dust can be utilized.
- Finally, awareness programme should be undertaken with no vehicle day and assessment for air pollution to share the benefits among the general population. Mass awareness should be done at local level by the way of advertisements on local TV channels, theatres and at public stations like bus stops, libraries etc. The public has to be promoted for using CNG pattern in vehicles.

Parking : Free on-street parking is the norm in Nashik. Double parking is common, especially in busy commercial areas such. Parked vehicles often occupy one or more lanes of the carriageway. This reduction in effective

width often results in congestion and traffic jams. Congestion from poorly managed parked vehicles not only reduces carriageway widths, but it also hampers the mobility of all vehicles (especially public transport), increasing travel times and emissions secondary to vehicle idling. It has been observed that the traffic police do not have sufficient vehicles or personnel to enforce parking restrictions. Provision of public parking is required at the places like C.B.S., M.G. Road, Main Road, Canada Corner, College Road, Gangapur Road, Bytco point, Dwarka junction etc.

On street parking Measures:

- The safety and efficiency of the road shall be maintained through effective on street parking restrictions and management options. On street parking spaces shall be designed as per IRC:SP:12:2015.
- Carrying capacity of the road shall be taken into consideration while allotting on street parking spaces. Options such as restricting parking at all times on all mobility corridors shall be explored.
- Areas up to 50 m from intersections on all arms and other critical locations shall be kept free from parking and other encroachments.
- Parking shall be prohibited up to 3 metres on both sides of pedestrian crossings with appropriate road markings showing boundary of parking lots and 'No parking zone'.
- Opinion of traffic police and local stakeholders shall be necessary while designating parking spaces. Parking and halting (including auto rickshaws) shall be prohibited up to 20 metres prior to the bus stop and 15 metres after the bus stop.
- Lots for bicycle parking shall be provided in the on street parking lots at suitable locations as recommended in Bicycle plan for Pune.
- Any type of commercial activity or vehicles indulging in commercial activity shall not be permitted in designated parking lots.
- Parallel parking configuration shall be adopted for all three-wheeled and four-wheeled vehicles including motor cars, light commercial vehicles (LCV), buses and trucks.

- Perpendicular parking configuration shall be adopted for motorised two wheelers as well as bicycles. Only single lane parking shall be allowed for any on street parking lots

Off street parking structures

- Private sector's investment shall be encouraged for creating multi story parking structures.
- Cost of land, construction of built space, operation and maintenance shall be recovered from the users using such facility.
- The capacity of off street parking block shall be dependent on the carrying capacity of the adjoining street and not on FSI permissibility or availability of built up space.
- Design of multi storey parking spaces and standards. Off street parking spaces shall be designed to comply with design standards, including dimensional and circulation requirements. IRC:SP:12:2015, NBCC, BSI standards shall be adopted.
- Multi Storey parking structure shall have proper access road and separate entry and exit ramps for vehicle movement to all floors.

Truck Terminal: Terminal facility in the form of Truck Terminus for heavy vehicles is in existence at *Adgaon*. Truck Terminus is partly developed on Mumbai-Agra National Highway and is functioning. At Pune-Nashik National Highway such type of truck terminus is presently absent and need to be provided. The C.B.S. in Nashik city and the existing Nashik Road Bus Station outside the Railway Station are very heavily loaded and their location in the heart of developed locality offers no scope for making more space available for bus parking.

The growing traffic needs in the city would also call for proper traffic management measures along with traffic signal with area co-ordination traffic signals etc. Due to rapid growth of auto-rickshaws and two-wheelers and lack of proper traffic control, the road accidents are prevalent in the city.

- The inner city roads are congested particularly during the morning and evening peak hours. The comprehensive area traffic control plans need to be prepared for the congested area.
- The wholesale market like Gole Colony and Main road may need to be suitably relocated by making reservation in the land use plan.
- The national and state highways passing through the city function as major arterial roads. In the absence of an effective by pass, intermixing of regional traffic and city traffic takes place, especially on the national highway. This adds to the traffic congestion on the highway in the city area. Thus, there is a need to segregate inter-city and intra-city traffic, may be by providing service roads or by constructing effective by pass links.
- There should be planned and designated bus stops that reduce traffic congestion and accidents.
- Footpath should be built on every road of the city. The widening and maintenance of the roads should be undertaken in an effective manner.
- The road marking such as Zebra Crossings would be essential, particularly, at the intersection where there is significant pedestrian-vehicle conflict.
- Inadequate street lighting also undermines the safety and convenience on the city road. This situation needs to improve.
- Efficiency, energy, environment and equity should be taken into account while solving traffic and transportation problem.

Cycle Track: To contribute to the sustainable development of the city, provision of dedicated 3.0 m. wide cycle track along all nallas having width more than 6 m, can be developed. Municipal Corporation should look after the procurement of required lands and its construction. In addition to this, 6.0 m. wide cycle track can be developed in the Nashik bank canal land. The development of this cycle track can be done by public-private participation or from the funds of Municipal Corporation. In addition to this,

provision of cycle track shall be made in green belt proposed along river sides.

Green Belt Development: The Green Belt along the banks of Godavari, Nasardi, Valdevi and Darna Rivers can be developed. This belt shall be a use for plantation, cycle track, recreation, etc. which will protect the erosion of the river banks and also enhance the environment.

- Conservation of green belts.
- Improvements of Footpaths.
- Developments of Tree plantation on the road side in order to increase beauty.
- Periodic manicure of tree planted on roads.
- Prohibition of Spiting, peeing & throwing waste on the roads.
- Improvement of Traffic island & junctions.
- Awareness to citizens to keep city clean through slogans, messages, media etc.
- Maintenance of public utility buildings and Monuments.
- Total use of open land for green belt development
- Arranging the seminar/awareness programme at school & college levels.

Point Sources

Nashik had been growing very fast industrially, during the last few decades. There are some major industrial activities on the out skirt of Nashik city, such as Hindustan Aeronautics Ltd. at Ozar, Thermal power station at Eklahare, Sinnar M.I.D.C., Five Star Industrial Estate at Sinnar, which can directly or indirectly influence the working population as well as trade and commerce activities of the city. Industrial development within city limit is also noteworthy which has directly or indirectly increased the working population, as well as Trade and Commerce. Some of them are Currency and Security Press, Govt. of India, Crompton Greaves, M.I.C.O., V.I.P., CEAT, Mahindra and Mahindra, Railway Traction Factory. Besides this, there is sporadic Industrial development comprising of sawmills, small scale industries, work-shops etc. spread all over the Corporation Area.

M.I.D.C has developed an Industrial Area in Satpur over an area of 635.76 hectares, Ambad over an area of 515.50 hectares and Sinner over an area of 51.067 hectares. In addition to above, there is Nashik Industrial Co-op Estate having an area of 135 hectares, established in 1962. There are about 6990 small scale, 27 medium scale and 131 large scale industrial units registered. Majority of the Industries which came up in the city or Industrial areas are Automobiles, Engineering, Electrical, Electronics, Stationary manufacturing, Printing press components, Metal Arts, Steel and wooden Furniture, Fiber and plastic moldings, Pharmaceutical and medical equipment, Data processing etc. All the above units, more or less, have contributed directly or indirectly in pushing up the trade and commerce activity in the city.

Thermal Power Plant: Eklahare Thermal Power Plant located in village Eklahare, near Nashik Road, caters to the power demand. From there, power is fed into the western division grid and subsequently distributed to substations and finally to households. In line with the guide lines issued by Central Electricity Authority (CEA), MAHAGENCO plans to install energy efficient 1x660 MW coal based super-critical thermal unit at Nashik as replacement project.

- The data for fuel consumption pattern in the industries of Nashik is not updated. There are large numbers of medium scale industries established within the city limit as well as in MIDCs. Inventorization of fuel consumption of prominent industries should be maintained with inclusion of technological gaps.
- Majority of the industries of Nashik are of engineering or manufacturing nature. There is dire need for the identification of low cost and advanced cleaner technology for these industries. Use of air pollution monitoring devices (Continuous Environment Monitoring System) and other in-situ emission reduction devices should be made mandatory in their premises.
- Use of fossil based fuel is high in Nashik's Industrial area. Industries should adopt natural gas or renewable resources as fuel for their

operations. Use of Furnace Oil should be regulated. Provision for supply of LPG or PNG should be explored.

- Industries should adopt stack emission norms beyond those prescribed by CPCB Industries/power plants, which should be followed by regular QA/QC & performance audit.
- Power Shedding is a common phenomenon in Nashik MIDC area, which gave rise to number of D.G sets in the vicinity. To control the emission from the D.G set, their stack should be regulated according to the standards prescribed. Control equipment installation should be made mandatory. Provision of continuous supply should be made.
- All the bulk drug and pesticides manufacturing units should be proposed to improve efficiency of their VOC scrubbers. Some units having coal fired boilers are proposed to improve efficiency of the wet scrubber and to stick for eco-friendly fuels. Solvent distillation Units should be directed to establish waste solvent recovery unit. The chemical and dyes units should improve their scrubbers and dust collectors.
- Energy Conservation Scheme should be encouraged in the industries that are not economically capable towards shifting cleaner fuel use or advanced cleaner technologies.
- NMC, MIDC & MPCB should survey for the identification of illegal SSI and their levels of operation and their contribution in each of the grids in the city. Need for regulations for such units.

Management

There are five AAQM locations covered under SAMP at SRO Office, KTHM College, MIDC Satpur, RTC Colony and NMC Nashik office. The Air Quality Index (AQI) of period January to February 2018 shows AQI is satisfactory (51-100) to moderate (101-200). The average concentration of SO_2, NOX and RSPM during this period was 7.04 µg/m^3, 22.47 µg/m^3 and 106.72 µg/m^3, respectively The dominant parameter are Particulate matter & CO, attributed to growing vehicular traffic and construction projects as well as commercial and infrastructure development including road construction etc. A strategic approach towards Hierarchical and structured managerial system for efficient implementation should be initiated with information exchange to SPCB/CPCB (of monitoring devices).

There is a lack of collaborative policy initiative among the administrations and organisation with regard to air quality improvement. These sources could be State Pollution Control Board, Regional transport office, Nashik Municipal Corporation, CIDCO, MIDC, Oil Companies, Anti-Adulteration cell, and representative from ULB and NGOs, school and colleges. As and when, it is felt by the apex body that particular information desired is either site specific or city specific it can commission studies/ investigate on its own. Monitoring and regulatory agencies will provide all the information on monitoring to this body for data assimilation and dissemination. Regulatory framework, if needs can be communicated to the apex body for starting the initiative for policy formation.

Nashik stands at a crossroad in its history and development. With suitable urban interventions at this stage, it can avoid the pitfalls of cities of similar characteristics and can set high standards for other cities to follow. The city has the potential to become a global commercial and cultural centre that affords its citizens immense benefits in the form of jobs, opportunities, and improved quality of life. For this opportunity to become a reality, the city will have to develop adequate infrastructure and services to facilitate development and improve the quality of life of all its citizens, both rich and poor.

3. AMBIENT AIR QUALITY MONITORED AT NASHIK

Nashik - RTO Colony

Table: Data for Monthly average reading recorded at RTO Colony

Station Name	year	Month	Average of SO_2	Average of NOx	Average of RSPM
			50	***40***	***60***
RTO Colony	2017	Apr	23	28	94
		May	12	26	81
		Jun	11	23	74
		Jul	11	16	57
		Aug	10	15	54
		Sep	9	16	57
		Oct	5	19	131
		Nov	10	25	115
		Dec	5	19	131
	2018	Jan	8	22	97
		Feb	9	18	97
		Mar	11	19	125

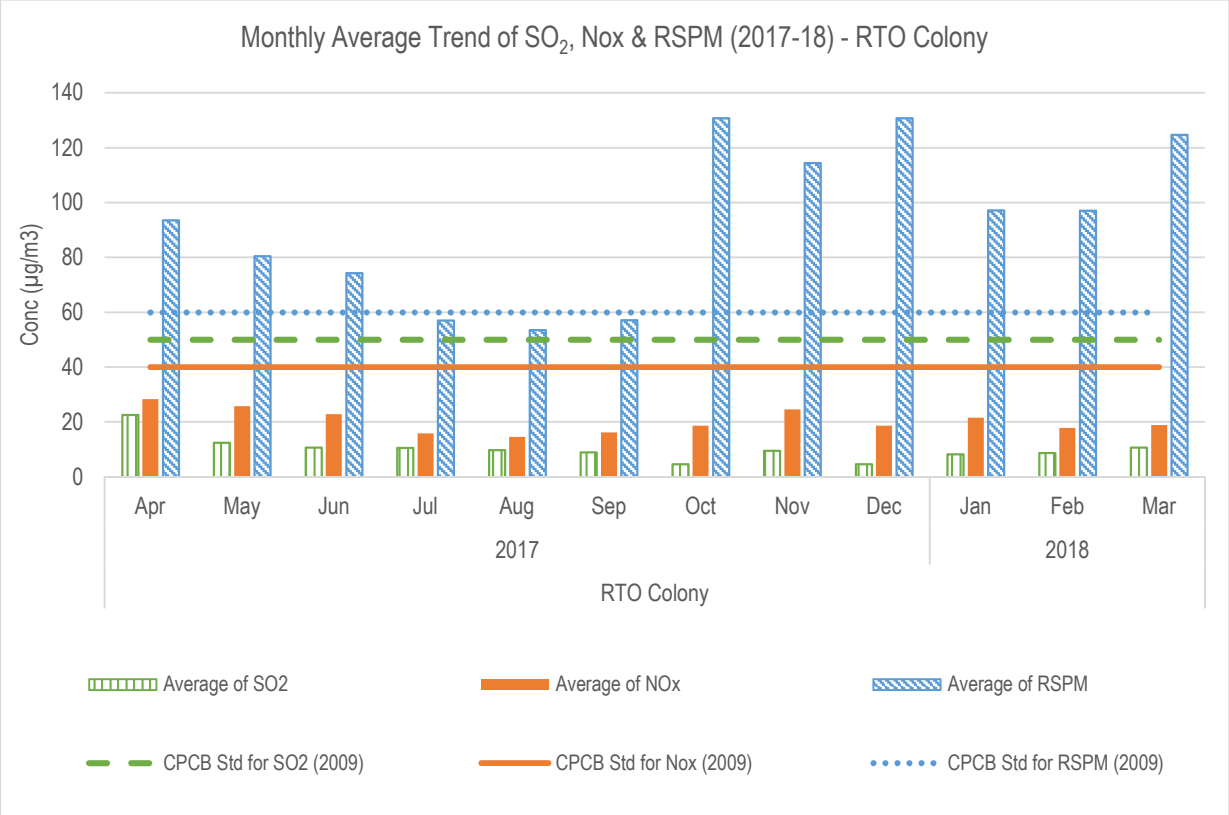
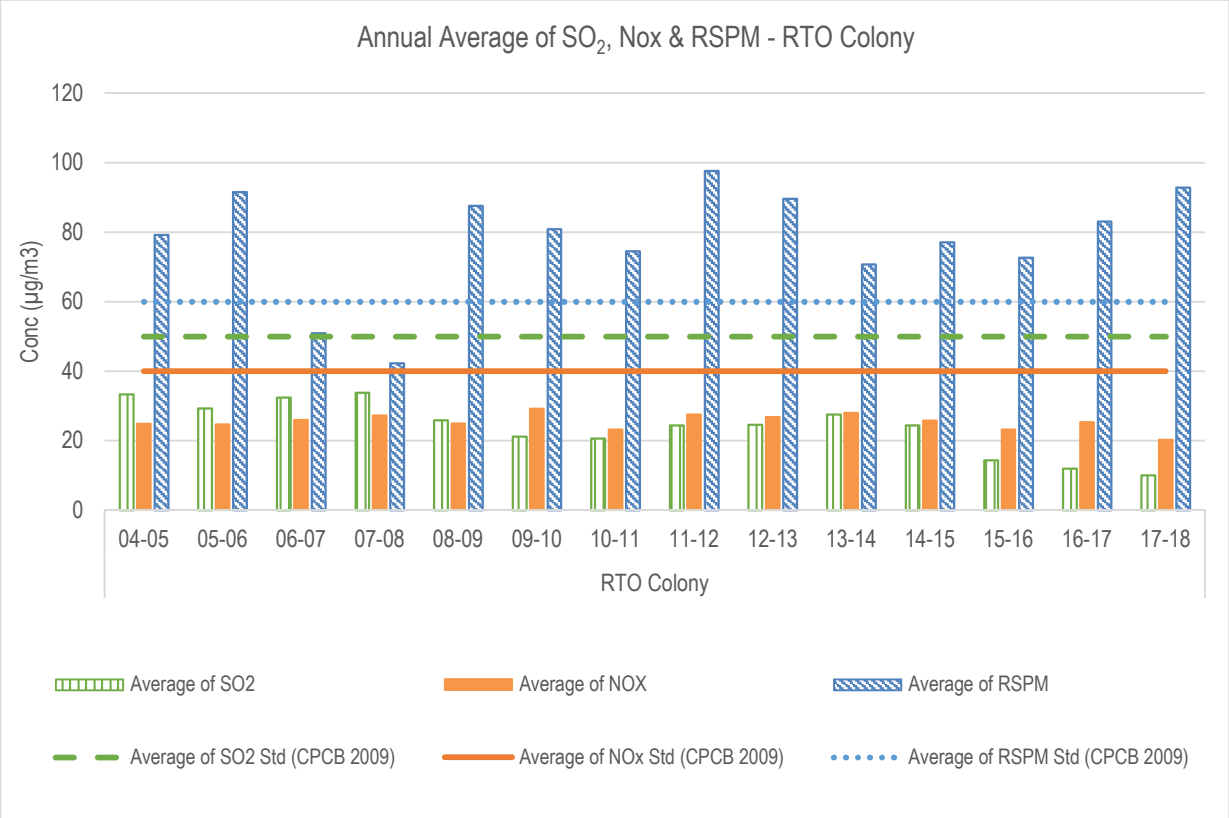


Figure: Monthly average reading recorded at RTO Colony

Table: Data for Annual average trend of SO_2, NOx, and RSPM at RTO Colony

Station Name	year	Average of SO_2	Average of NO_X	Average of RSPM
		50	***40***	***60***
RTO Colony	04-05	33	25	79
	05-06	29	25	92
	06-07	32	26	51
	07-08	34	27	42
	08-09	26	25	88
	09-10	21	29	81
	10-11	21	23	75
	11-12	24	28	98
	12-13	25	27	90
	13-14	28	28	71
	14-15	24	26	77
	15-16	14	23	73
	16-17	12	25	83
	17-18	10	20	93

Figure: Annual average trend of SO_2, NOx, and RSPM at RTO Colony



Nashik - MIDC Satpur - VIP

Table: Data for Monthly average reading recorded at MIDC Satpur - VIP

Station Name	year	Month	Average of SO_2	Average of NOx	Average of RSPM
			50	***40***	***60***
MIDC Satpur - VIP	2017	Apr	19	26	124
		May	14	24	77
		Jun	10	20	57
		Jul	10	16	41
		Aug	9	13	52
		Sep	9	15	48
		Oct	4	17	112
		Nov	9	22	81
		Dec	4	17	112
	2018	Jan	8	22	79
		Feb	9	19	73
		Mar	13	20	108

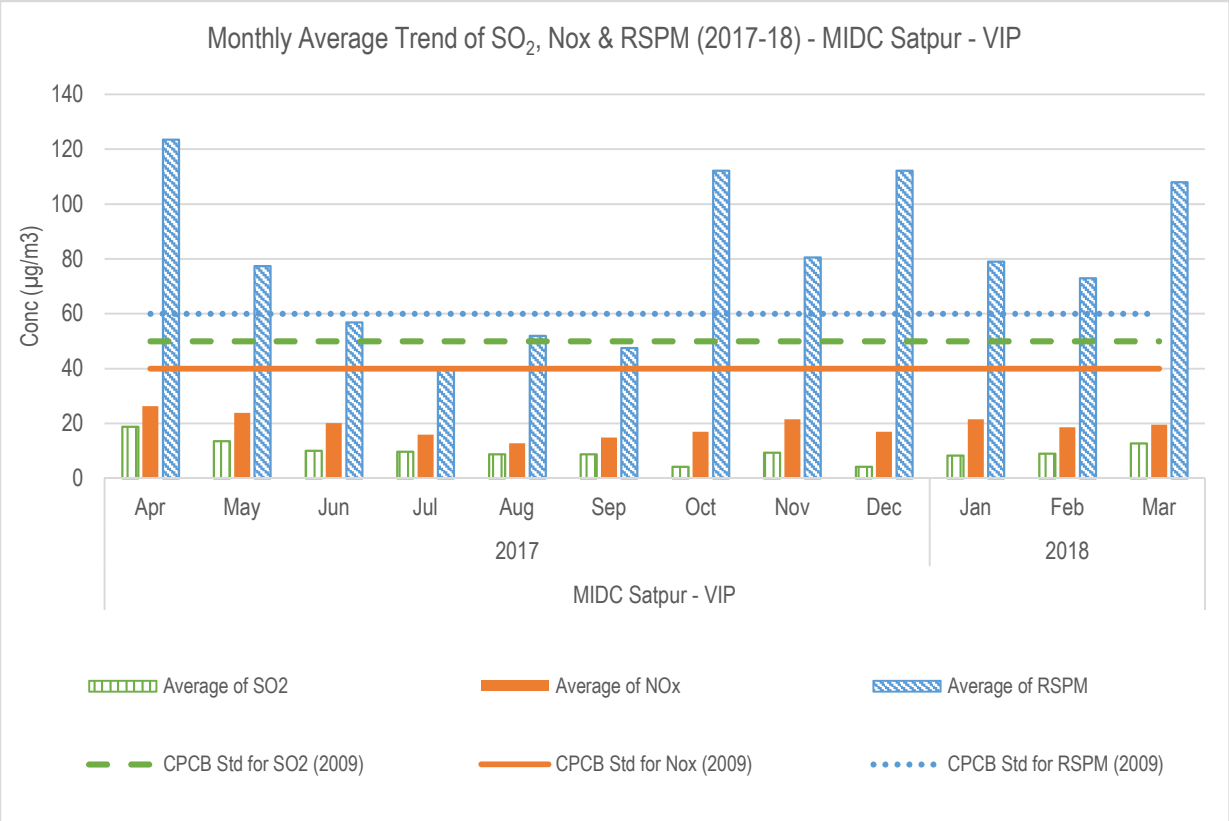


Figure: Monthly average reading recorded at MIDC Satpur - VIP

Table: Data for Annual average trend of SO_2, NOx, and RSPM at MIDC Satpur - VIP

Station Name	year	Average of SO_2	Average of NO_X	Average of RSPM
		50	***40***	***60***
MIDC Satpur - VIP	04-05	36	27	90
	05-06	33	28	98
	06-07	34	28	58
	07-08	41	34	52
	08-09	30	27	91
	09-10	23	29	85
	10-11	23	25	70
	11-12	25	28	98
	12-13	25	27	92
	13-14	27	28	71
	14-15	25	26	80
	15-16	14	22	78
	16-17	11	24	88
	17-18	10	19	81

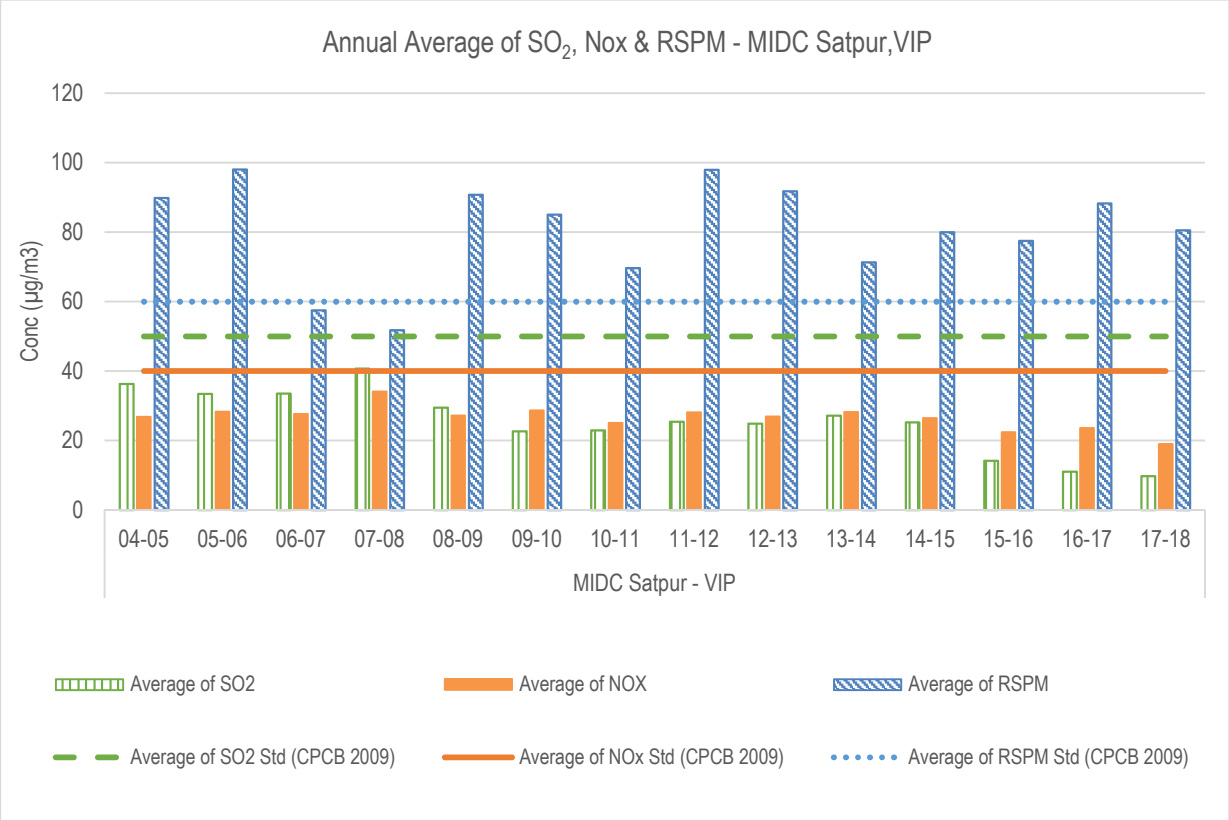


Figure: Annual average trend of SO_2, NOx, and RSPM at MIDC Satpur - VIP

Nashik - NMC Nashik

Table: Data for Monthly average reading recorded at NMC Nashik

Station Name	year	Month	Average of SO_2	Average of NOx	Average of RSPM
			50	***40***	***60***
NMC Nashik	2017	Apr	22	29	99
		May	9	15	74
		Jun	10	23	82
		Jul	10	16	58
		Aug	9	14	51
		Sep	9	21	65
		Oct	4	20	148
		Nov	9	25	124
		Dec	4	20	148
	2018	Jan	10	25	131
		Feb	9	19	117
		Mar	13	23	108

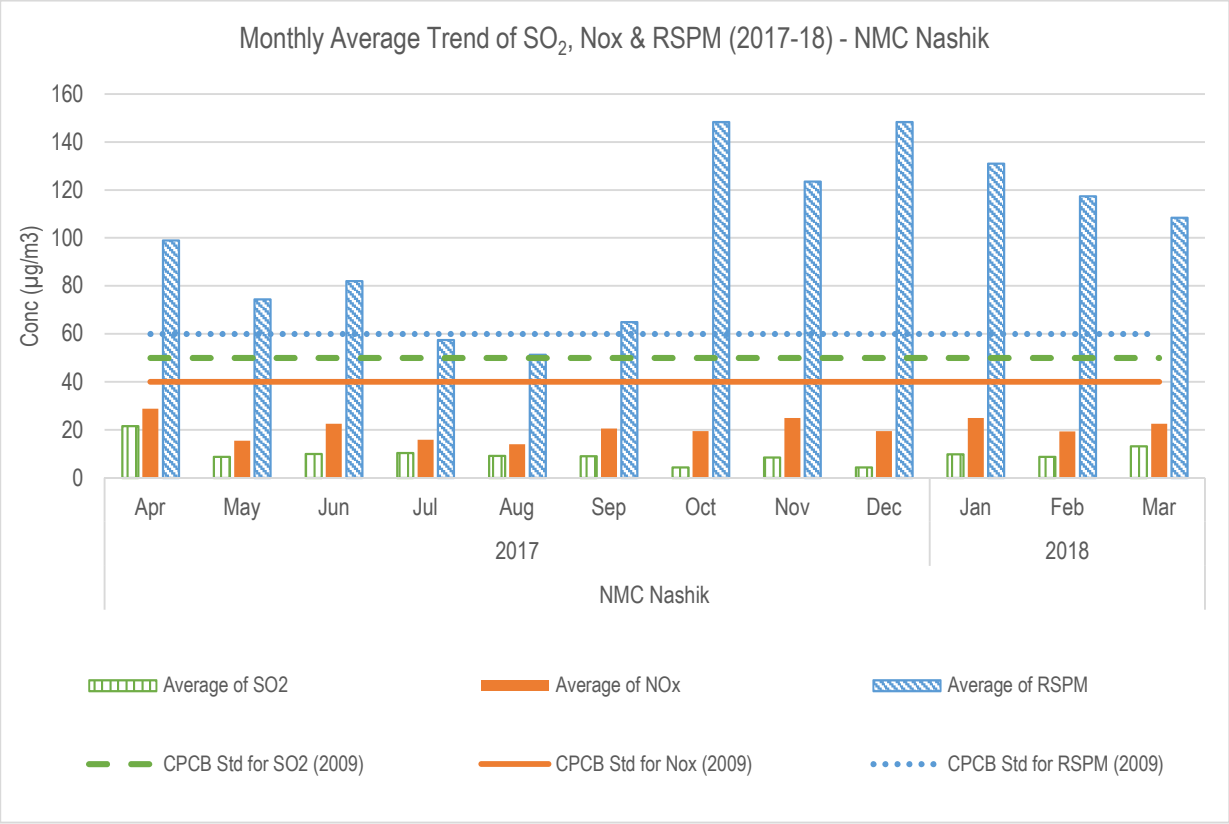


Figure: Monthly average reading recorded at NMC Nashik

Table: Data for Annual average trend of SO_2, NOx, and RSPM at NMC Nashik

Station Name	year	Average of SO_2	Average of NO_X	Average of RSPM
		50	***40***	***60***
NMC Nashik	13-14	28	28	70
	14-15	25	26	78
	15-16	15	24	94
	16-17	12	26	97
	17-18	10	20	100

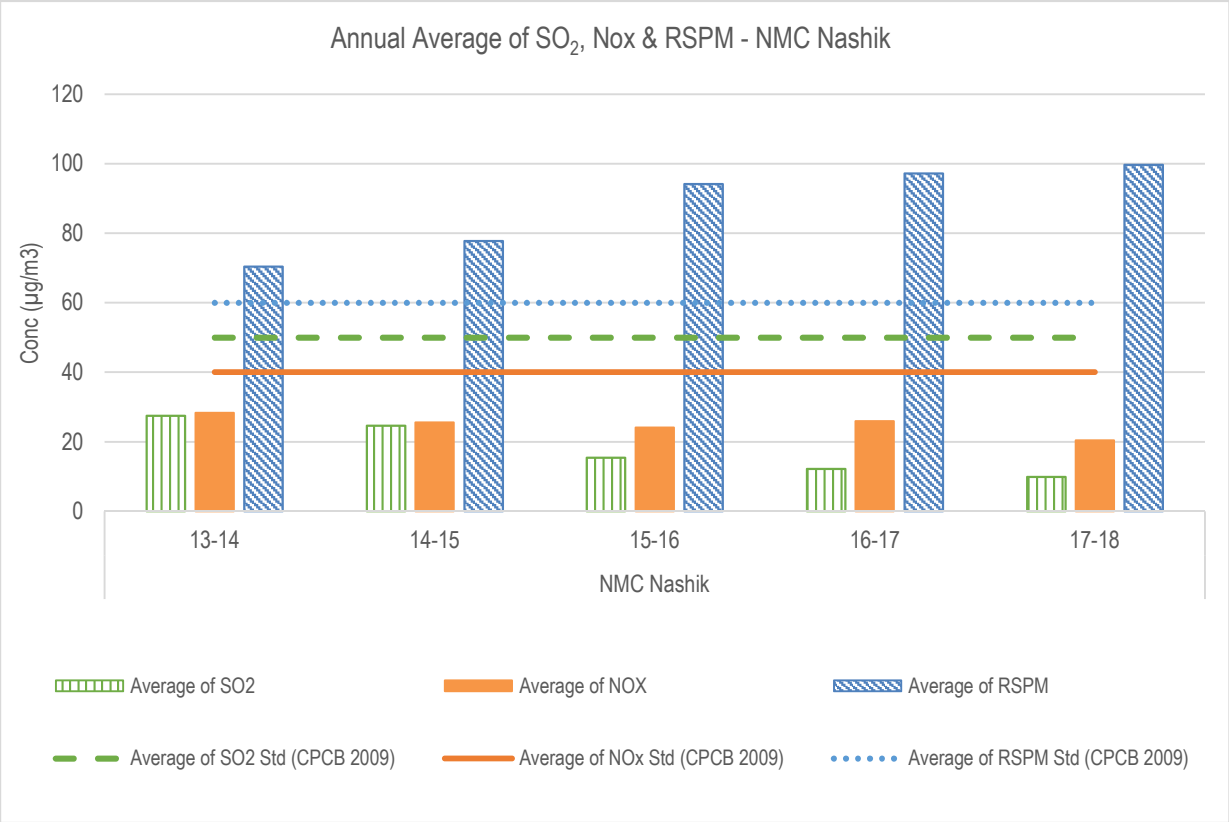


Figure: Annual average trend of SO_2, NOx, and RSPM at NMC Nashik

Nashik - SRO Office Nashik

Table: Data for Monthly average reading recorded a SRO Office Nashik

Station Name	year	Month	Average of SO_2	Average of NOx	Average of RSPM
			50	***40***	***60***
SRO Office Nashik	2017	Apr	22	29	93
		May	13	24	72
		Jun	11	23	55
		Jul	10	15	43
		Aug	10	14	38
		Sep	9	16	43
		Oct	5	21	95
		Nov	7	23	92
		Dec	5	21	95
	2018	Jan	9	23	134
		Feb	9	17	105
		Mar	11	17	114

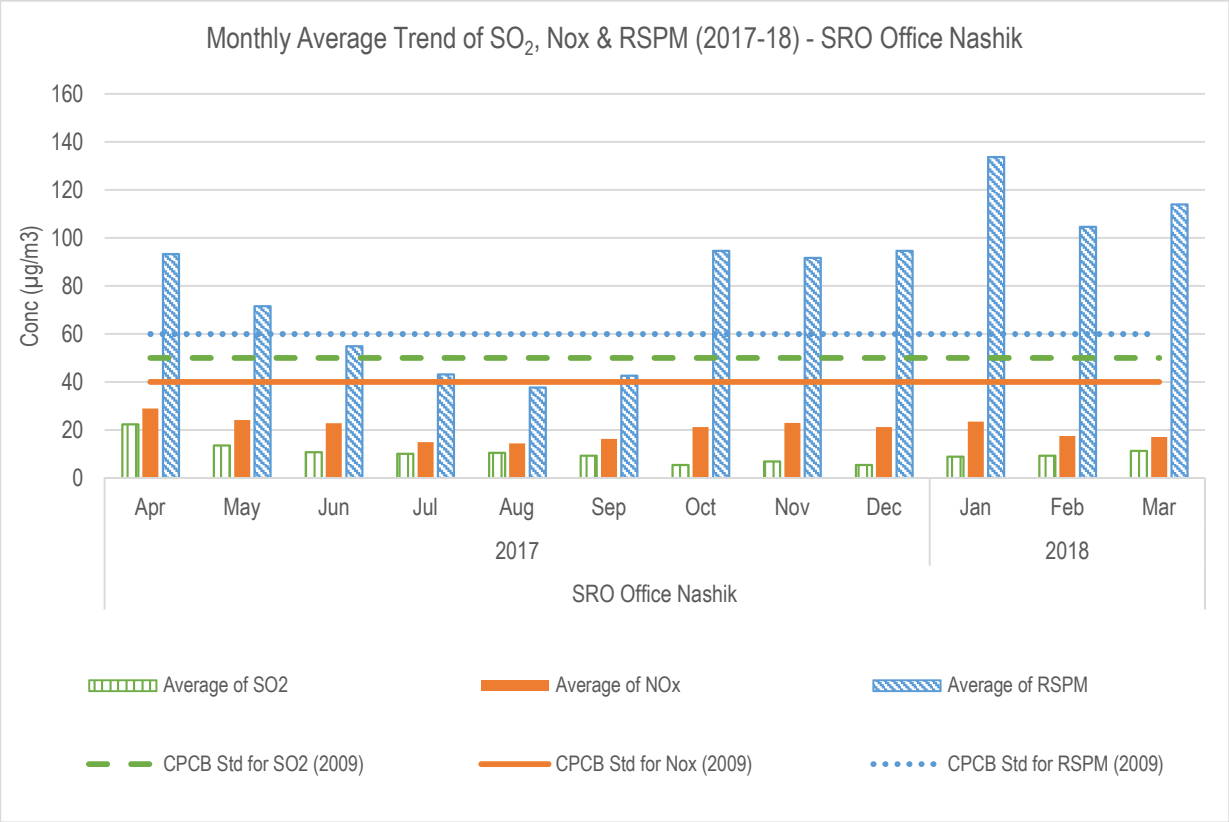


Figure: Monthly average reading recorded at SRO Office Nashik

Table: Data for Annual average trend of SO_2, NOx, and RSPM at SRO Office Nashik

Station Name	year	Average of SO_2	Average of NO_X	Average of RSPM
		50	***40***	***60***
SRO Office Nashik	04-05	19	31	69
	05-06	14	27	78
	06-07	16	27	102
	07-08	17	26	114
	08-09	23	29	104
	09-10	21	27	86
	10-11	20	23	85
	11-12	24	28	114
	12-13	24	27	90
	13-14	28	28	78
	14-15	26	26	73
	15-16	15	24	76
	16-17	11	26	72
	17-18	10	21	80

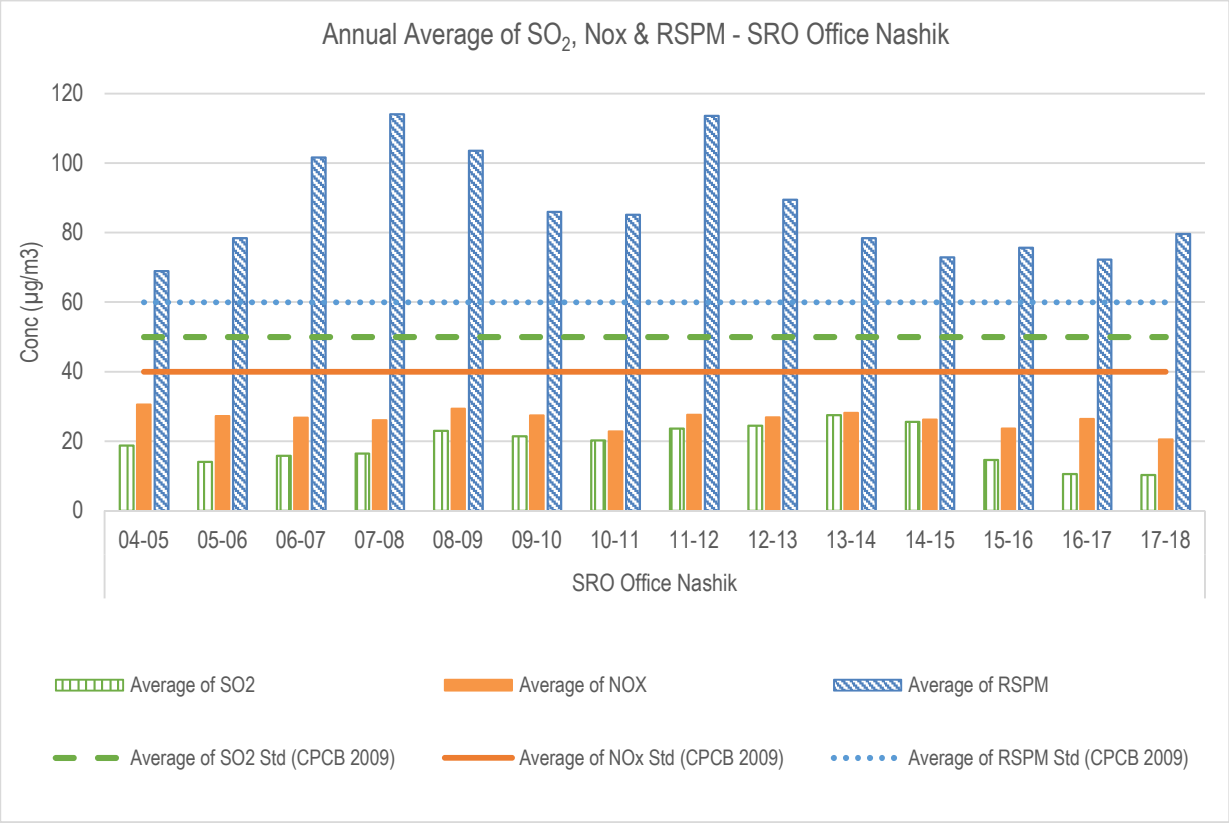


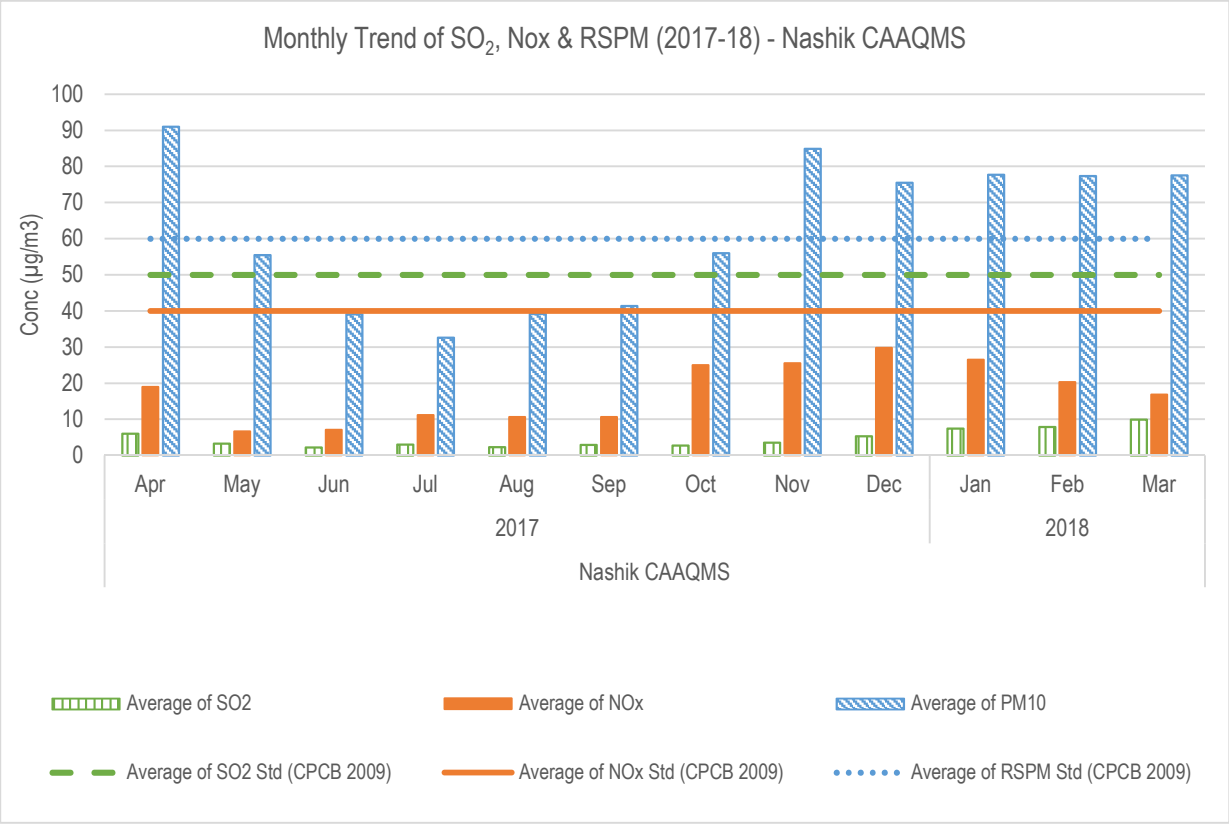
Figure: Annual average trend of SO_2, NOx, and RSPM at SRO Office Nashik

Nashik - Nashik CAAQMS

Table: Data for Monthly average reading recorded at Nashik CAAQMS

Station Name	year	Month	Average of SO_2	Average of NOx	Average of RSPM
			50	***40***	***60***
Nashik CAAQMS	2017	Apr	6	19	91
		May	3	7	55
		Jun	2	7	39
		Jul	3	11	33
		Aug	2	11	39
		Sep	3	11	41
		Oct	3	25	56
		Nov	4	26	85
		Dec	5	30	76
	2018	Jan	7	26	78
		Feb	8	20	77
		Mar	10	17	78

Figure: Monthly average reading recorded at Nashik CAAQMS



Green Plantation under Fly-over

Traffic movement through Circle (Night View)

Traffic movement through Circle -Plantation (Day View)

Traffic movement through Circle with plantation

Plantation at traffic areas.

Plantation at traffic areas

Plantation at traffic areas

Green Corridors under Fly-Overs.

Revised Action Plan

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
1	(i)	Vehicle emission	Extensive drives against polluting vehicles for ensuring strict compliance by **traffic police on regular basis currently under Motor Vehicles Amended Act** (2019) provision for fine for not carrying Pollution Under Control certificate	SO2 NO2 & PM	Yes		Short - Mid Term	Regular & In progress	Traffic Police	This action is conducted by **traffic police on regular basis currently under Motor Vehicles Amended Act** (2019) provision for fine for not carrying Pollution Under Control certificate
	(ii)		Public awareness campaigns through EPIC India (Energy Policy Institute at University of Chicago) conducted for air pollution control, vehicle maintenance, minimizing use of personal vehicles, lane discipline etc.	SO2 NO2 & PM	Yes	Contract awarded to TERI by SDC	Short- Mid Term	TERI to work 4 year, 2019-2023. EPIC Start from Nov 2019 and will be completed by December 2021.	TERI, EPIC, City Colleges, Schools, NMC, Nashik Smart City and Local NGOs	• Under **Clean Air Project in India (CAP-India) of Swiss Agency for Development & Cooperation (SDC)** Nashik has been selected as a Non-Attainment city to carry SA/air quality assessment, pilot demonstrations and AWARENESS/CAPACITY BUILDING workshops. • **EPIC India (Energy Policy Institute at University of Chicago) conducted 2 awareness workshops** in Sandip University and more awareness workshops are planned in the city to begin from Nov, 2019 with involvement of Schools, Colleges & Local NGOs.

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No	Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
(iii)		Prevent parking of Vehicles at Non-designated areas through enforcing penalty of Rs 200 for wrong parking and also tow away charges for towing away the vehicle parked on the roadside. Under Smart City initiative, Smart parking project is being executed.	SO2 NO2 & PM	Yes	136.48 cr	Short- Mid Term	2019-2021	RTO & Traffic Police Department, Nashik Smart City	• Penalty of Rs 200 for wrong parking and also tow away charges for towing away the vehicle parked on the roadside. Under Smart City initiative, Smart parking project is being executed. • Total 33 smart parking locations (28 on street, 5 off street) have been identified 21 parking spaces are ready and operational by 1st Nov, 2019. • Charges 4 wheeler Rs 10/hour, 2 wheeler Rs 5 / hour. MULTI LEVEL CAR PARKING Rs 16.25 crore, PPP mode (Tender Process). • Integrated Traffic Management & Command & Control also being set up.
(iv)		Retrofitting of particulate filters in Diesel vehicles, when BS-VI fuels are available	SO2 NO2 & PM	Yes	25 lakhs for implementation (Rs 0.5-0.7 lakhs per unit)	Mid Term	2019-2021	RTO Department	• Out of **3674 old auto rickshaws to be scrapped**, 1572 have been scrapped till 31st March, 2019. • Out of **315 old taxis to be scrapped**, 42 were scrapped till 31st March, 2019.
(v)		Checking of fuel adulteration and random monitoring of fuel quality data with coordination of anti-adulteration cell	SO2 NO2 & PM	Yes	Survey and random checking work-Rs 5-10 lakhs	Mid Term	Midterm but a continuous process	Residence Deputy Collector (RDC), anti-adulteration cell, RTO	• Checking fuel adulteration with coordination of anti-adulteration cell which is a continuous process.

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
	(vi)		Widening of road and improvement of Infrastructure for decongestion of Roads. Proposed 2008 numbers for widening of roads from 6-7.5 m to 9 m	SO2 NO2 & PM	Yes	25 cr	Mid Term	Required works will be completed in 3 phases within 3 years by 2022	PWD, NMC (Nashik Municipal Corporation)	• Nashik Municipal Corporation (NMC) has received **2,008 proposals for widening of roads from 6-7.5 m to 9 m.** Among these, the process of 7/12 extract has been completed for 250 places and road widening work started. **SMART CITY ROAD** Rs 17 crore (project in execution)
	(vii)		Construction of expressways/bypass to avoid congestion through Widening of 2.3 km Nashik-Pune highway (NH 50) from Sinnar Phata to Darna also, 7metre-wide highway will be converted into **four-lanes** with 5m wide median along with 5.5 m of service road.	SO2 NO2 & PM	Yes	50 cr	Mid -Long term	By 2022	NHAI/ State PWD/ NMC	• NHAI has initiated construction of flyovers/ underpasses. • **Flyover at Dwarka circle is proposed by NHAI**. **Widening** of 2.3 km **Nashik-Pune highway (NH 50)** from Sinnar Phata to Darna. • 7-metre-wide highway will be converted into **four-lanes** with 5m wide median along with 5.5 m of service road.
	(viii)		Promoting Battery operated vehicles by inviting Request for Proposal (RFP) for **battery operated buses infrastructure** on	SO2 NO2 & PM	Yes	100 cr	Long Term	After award of City Bus project, the time frame required will be 24 months	NMC, RTO & Traffic Police Department, Nashik	• Under Smart City project, NMC has invited Request for Proposal (RFP) for **battery operated buses infrastructure** on gross cost contract basis. • Proposed that old auto rickshaws as per RTO norms, will be promoted, with additional incentives, to change it to **battery operated auto rickshaws**.

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
			gross cost contract basis.						Smart City	• Special parking areas will be allotted for such auto rickshaws.
	(ix)		Install weigh in Motion bridges at the borders of the cities/Towns and states to prevent overloading of vehicles	SO2 NO2 & PM	Yes	5 cr	Short term	Entry point on National Highways is completed and other routes in progress. 2019-2021	RTO & Traffic Police Department	• Heavy penalty mechanism proposed for overloaded vehicles. • Total entry points are 06, namely Vilholi truck terminus, Adgaon truck terminus, Nandoor naka, Peth road naka, Dindori road naka and Chehedi naka.
	(x)		Synchronizing Traffic movements/ and to Introduce Intelligent Traffic systems for Lane Driving by introducing COMMAND & CONTROL ROOM: Around 800 cameras are being installed in the city traffic police regularize traffic violations related to Motor Vehicle Act through CCTVs. And by introducing Public Bike Sharing Project	SO2 NO2 & PM	Yes	25 cr	Short-term	ITMS project. 2019-2021	RTO & Traffic Police Department, Nashik Smart City	• **ITMS - DPR in progress.** Under the smart city project, COMMAND & CONTROL ROOM (in execution) around 800 cameras are being installed in the city traffic police regularize traffic violations related to Motor Vehicle Act through CCTVs. • PUBLIC BIKE SHARING PROJECT (completed)

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
	(xi)		Installation of Remote Sensor based PUC systems by upgrading 34 PU centres out of 54 PUC	SO2 NO2 & PM	Yes	1 cr	Short Term	2019-2020	RTO & Traffic Police Department	• Total 54 PUC in Nashik **34 PU centres from 1st April, 2019 upgraded to remote sensor based PUC system** (Online) having the capacity to send the data remotely to the regulatory authority. • **20 PUCs to be upgraded by 1st Nov, 2019**.
2	I	Resuspension	Creation of green buffers along the Traffic corridors by identifying ad developed under CSR	PM	Yes	5 cr	Long Term	Completed by December 2022.	NMC	• Main traffic corridors have been identified. • **9 locations developed under CSR**, work on creation of green buffer for remaining in progress
	II		Maintaining Pothole Free Roads for Free Flow Traffic	PM	Yes	1 cr	Mid Term	Continuous process.	PWD/ NMC	• Scrapping and levelling of roads is a continuous process. • During summers WBM, June- Sep (Cold mix pot pret/Jet patching, Paver block, Rich concrete M60)
	III		Introducing water fountains at Major Traffic intersection, wherever feasible	SO2 NO2 & PM	Yes	10 Lakhs	Short	December 2020.	NMC	• In progress identifying 5 spots (cost of Rs 2Lakh per site total 10 Lakhs)
	IV		Greening of open areas, garden, community places, schools and housing societies by planting and maintaining 11,000+50,000 trees	SO2 NO2 & PM	Yes	5 cr	Long Term	in progress	NMC, Nashik Smart City	• Garden department of NMC planted **around 11000 trees under AMRUT in 2019-20. "DEVRAI"** project executed to plant and maintain the local trees like Pipal and others. • 50,000 Trees planted at cost of Rs 6.5 crore, under NDTL 5000 tree plantation in 2 months, Devrai 5000 tree plantation within 4 months, 2000 Bel tree plantation in 1 month, AMRUT 4500 trees to be planted in 2 months

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
	V		Blacktopping of metaled Roads including pavement of Road shoulders	PM	Yes	150 cr	Short- Medium Term	Will be completed by December 2021.	NMC	• **Phase wise blacktopping of W.B.M. roads** in Panchavati, Nashik road, Satpur, New Nashik, Nashik East and Nashik West division is planned. • **WBM roads 110 km and Concrete 2 km (ongoing) and completion by June 2020.** • Budgetary provision made by NMC
3	(i)	Biomass/trash burning, landfill waste burning	Extensive drive against open burning of biomass, crop residue, garbage, leaves etc. by imposing 'Heavy penalty mechanism' for open burning of garbage, Constructing special squad for identification of open burning of garbage or waste. Also grievance app named NMC e - connect has been developed for public to inform such incidences. Also Waste to Energy plant is in progress	SO2 NO2 & PM	Yes	25 lakhs	Short Term/ Long Term	Continuous activity.	NMC	• **Heavy penalty mechanism for open burning of garbage**. • A **special squad has** been formed for identification of open burning of garbage or waste. • **NMC grievance app** named **NMC e - connect** has been developed for public to inform such incidences. Till today, fine of Rs. 3.10 L collected from people burning garbage in open in total 62 cases. • Public Awareness programs are planned, with the help of NGOs and educational institutes, every 3 months. • **Details of Waste to Energy plant:** Technology employed is Bio Methanation process. Capacity of plant is 30Tper day. Waste comprising of food and kitchen waste (15 T) and septage of septic tanks (15 T) is processed in the plant. Presently, around 500 units (kWh) of electricity is generated per day. • Plant is commissioned since last 1 year. Cost of the project is Rs. 8 cr, out of which, GIZ Germany has funded Rs. 6.8 cr and NMC has funded 1.2 cr. Plant is connected

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
										to MSEDCL grid. Plant run by an SPV named Vilholi Waste Management Pvt. Ltd. on PPP basis operation and maintenance of the plant. • NMC pays Rs. 5 lakhs per month to the said company for man power, diesel, consumables and transport. Any electricity generated above 3300 units is given to the SPV. The plant is operated on the principle of Open Access. • **Details of land fill sites**: NMC has constructed sanitary land fill sites for process rejects and inert material. The same is being used simultaneously. Closure of around 10 acres of this SLF is in progress. Construction of new SLF (2 acres) is in progress.
	(ii)		Regular check and control, of burning of Municipal Solid waste by installing Smoke detectors at different locations along with firefighting system at the MSW treatment facility	SO2 NO2 & PM	Yes	25 lakhs	Short Term	Continuous activity.	NMC	• Smoke detectors are installed at different locations along with firefighting system at the MSW treatment facility.
	(iii)		Proper collection of Horticulture waste and its disposal following composting –cum –	SO2 , PM	Yes	25 lakhs	Short Term	Continuous activity.	NMC, Nashik Smart City	• Separate collection mechanism for entire horticulture waste and windrow **composting (10-15 T)** implemented in the MSW treatment facility Compost Plant near Pandhav Leni Caves.

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
			gardening approach by carrying out Separate collection mechanism for entire horticulture waste and windrow composting							
	(iv)		Banning on burning of agricultural waste and crop residues and its implementation by carrying out awareness campaign among the farmers to prevent them from burning of agricultural waste and crop residues	SO2 NO2 & PM	Yes	10 lakhs	Short Term	Continuous activity.	NMC, Nashik Smart City	• Awareness program planned among the farmers to prevent them from burning of agricultural waste and crop residues.
4	(i)	Industry	Identification of Brick Kiln and their regular monitoring including use of designated fuel and closure of unauthorized units by seeking the possibility for shifting of kilns outside corporation limits	PM	Yes	25 lakhs	Short Term	Continuous activity.	District Administration, MPCB	MPCB & District Administration to check the possibility for shifting of kilns outside corporation limits.

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
	(ii)		Conversion of natural draft brick kilns to induced draft	PM	Yes	10 lakhs	Short Term	Continuous activity.	District Administration, MPCB	• Consultant or expertise appointed
	(iii)		Action against non-complying industrial units by Regular Vigilances and timely actions by MPCB time to time depending upon non-compliance.	SO2 NO2 & PM	Yes	1 cr	Short Term	Continuous activity.	MPCB & MIDC	• Nashik is 3rd largest industrial city of Maharashtra. • Nashik Industrial area is basically engineering industrial zone and no chemical industries are in existence. Total 1673 (Green, Orange and Red category) industries are in operational in the area. • Mainly pharmaceutical formulation, plastic and rubber industries are in existence. • Regular Vigilances and timely actions are taken by MPCB time to time and depending upon non-compliance.
5	(i)	Construction and Demolition Activities	Enforcement of construction & demolition rules by selecting the operator for processing Construction and Demolition Waste and by implementing Construction and Demolition Rules 2016 strictly.	PM	Yes	10 cr	Long Term	The Construction and Demolition Rules 2016 will be strictly implemented.	NMC	• NMC has floated Tender for selection of operator for processing Construction and Demolition Waste, and the Tender process is in progress and expected to be completed by December 2019. • The successful bidder will operate the processing activities for next 20 years. The Construction and Demolition Rules 2016 will be strictly implemented.

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
	(ii)		Control measures for fugitive emissions from material handling, conveying and screening operations through water sprinkling, curtains, barriers and suppression units	PM	Yes	5 cr	Long Term			
6	(i)	Management of Air Quality	Monitor local air quality at different locations by installing 4 AAQM stations and one CAAQMS station. Installation of 2 new CAAQMS stations is in process.	SO2 NO2 & PM	Yes	6 cr	Mid Term	Dec. 2021	MPCB & NMC	• Already installed by **MPCB at 4 AAQM stations and one CAAQMS station**. • As the population of Nashik is around 17 lakhs, 2 new CAAQMS stations are proposed and around Rs. 3 to 4 Crores will be required.
	ii		Comply with the requirements of the National Air Quality Management Framework	SO2 NO2 & PM	Yes	6cr	Mid Term	Dec. 2022	MPCB & NMC	• Already carried out 1 CAAQMS and 4 manual stations at different locations in the city. • As per population criteria proposed 4 locations of CAQMS are identified. The installation work will be completed within 1 year.
8	(i)	DG sets	Monitoring of DG sets and action against violations	SO2 NO2 & PM	Yes	15 lakhs	Mid Term	Dec-21	MPCB	• Continuous activity and guidelines are available on the website of MPCB.

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

Sr.No		Source group	ACTIONS	Expected reduction and impacts	Technical feasibility	Requirement of financial resources in Rupees	Implementation period (short/mid/long-term)	Time target for Implementation	Responsible agency (is)	REMARKS
	SCS-1		Reduction in DG set operation/ Un-interrupted power supply through Awareness programs for the use of solar operated inverters instead of DG sets to reduce the Air pollution, or to switch over to cleaner fuel instead of HSD or Diesel	SO2 NO2 & PM	Yes	15 lakhs	Mid Term	Dec-21	MPCB	• Awareness programs will be conducted for the use of solar operated inverters instead of DG sets to reduce the Air pollution, or switch over to cleaner fuel instead of HSD or Diesel. • Totally banned on the use of furnace oil operated DG sets. • Guidelines are available on the website of MPCB.
9	SCS-1	Bakeries	Use of LPG in Hotels and "*dhabas*" by banning the use of wood/coal as a fuel, in the bakeries *dhabas* and hotels	SO2 NO2 & PM	Yes	25 lakhs	Mid Term	Dec-21	NMC, MPCB	• Most of the bakeries, hotels are using LPG as fuel. • However, NMC will ban on the use of wood/coal as a fuel, in the bakeries *dhabas* and hotels after policy decision by General Body.
	SCS-1	crematoria		SO2 NO2 & PM	Yes	25 cr	Mid Term	Dec-19	NMC	• NMC has installed LPG and Electric operated crematoria at **Nashik Amardham**. • The same is proposed at other locations also.
	iii		communication plan for air quality	SO2 NO2 & PM	Yes	50 lakhs	Mid Term	Dec. 2023	MPCB & NMC	• Air quality is disseminated on MPC Boards web-site

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

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10	i	**Thermal Power Plant**	Action plan to address emissions from thermal power plant by installing FGD plant by the year 2021	SO2 NO2 & PM	Yes	500 cr	Long Term	Dec 2021	MahaGenco , MPCB	• M/s. **MahaGenco has informed that tendering process of FGD is in process.** • The matter is in consideration about control of emissions from the thermal power plant. • CPCB has given direction on 11/12/2017 to a) Plant shall meet emission limit of PM by installing ESP by March 31,2021 in unit 4 & 5. B) Plant shall install FGD by March 31,2021 in unit 3, 4 & 5 so as to comply SO_2 emission limit. C) Plant shall take immediate measures like installation of low NOx burners, providing Over fire Air (OFA) etc. and achieve progressive reduction so as to comply NOx emission limit by the year 2022.
			Source Apportionment (SA) and Emission Inventory (EI) study is in progress through IIT (Bombay) and NEERI		Yes				NEERI	• **Source Apportionment (SA) and Emission Inventory (EI) study** is in progress through IIT (Bombay) and NEERI
			Actions Planned							
			1. Smart Parking operational 1st Nov, 2019							
			2. Command & Control Centre in city under execution operational Feb, 2020							
			3.Public Bike Sharing project completed							
			4.20 PUCs upgraded to remote sensor based PUC system (Online) by 1st Nov, 2019							

ACTION PLAN FOR NON-ATTAINMENT CITY-NASHIK

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			5.NDTL 5000 tree plantation in 2 months, Devrai 5000 tree plantation within 4 months, 2000 Bel tree plantation in 1 month, AMRUT 4500 trees to be planted in 2 months.							
			6.Phase wise blacktopping - WBM roads 110 km and Concrete 2 km (ongoing) and completion by June 2020							